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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,464	01/10/2002	Yasuji Hiramatsu	215811US0PCT	4687
22850	7590	04/08/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			WILLIAMS, ALEXANDER O	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 04/08/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/926,464

Applicant(s)

HIRAMATSU ET AL.

Examiner

Alexander O Williams

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 January 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Serial Number: 09/926464 Attorney's Docket #: 215811USPCT/hc

Filing Date: 1/10/2002; claimed foreign priority to 3/7/2000

Applicant: Hiramatsu et al.

Examiner: Alexander Williams

Applicant's Amendment filed 1/8/04 has been acknowledged.

This application is a 371 of PCT/Jpo1/01787 filed 3/7/2001.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:
A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

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consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1 to 6, 8 to 19 and 21 to 26 are rejected under 35 U.S.C. § 102(b) as being anticipated by Katsuda et al. (U.S. Patent # 6,001,760).

1. Katsuda et al. (figures 1 to 30b) specifically figure 29 show a ceramic substrate **11** having a conductor **19,20** inside thereof, wherein the ceramic substrate is a sintered aluminum nitride substrate having a fractured section with intergranular fracture (**see column 26, line 65 to column 28, line 40**).
2. The ceramic substrate according to claim 1, Koichi show an average diameter of ceramic grains of said fractured section is 5 to 10 micro-meters (**see column 28, lines 61-64**).
3. The ceramic substrate according to claim 1, Koichi show has an impurity element is locally distributed in boundaries of ceramic grains of said fractured section.
4. The ceramic substrate according to claim 1, Koichi show the thermal conductivity of said ceramic substrate 100 - 120 W/m - K (see column 30, lines 24-26).
5. The ceramic substrate according to claim 1, Koichi show has an impurity-existent area where an impurity element is locally distributed in triple points of crystal grains, and an impurity element-nonexistent area where an impurity is not locally distributed in the triple points of the crystal grains. (see column 29, line 26 to column 30, line 2).
6. The ceramic substrate according to claim 1, Koichi show wherein said ceramic substrate has a diameter of 200 mm or more. (see column 27, lines 56-66).

8. The ceramic substrate according to claim 1, Koichi show the ceramic substrate has a thickness of 25 mm or less (see column 28, lines 20-32).

9. The ceramic substrate according to claim 3, Koichi show the impurity element is a sintering aid (see column 27, lines 30-55).

10. The ceramic substrate according to claim 3, Koichi show the impurity element is at least one selected from the group consisting of Y and O (see column 27, lines 30-55).

11. The ceramic substrate according to claim 5, Koichi show the impurity element is a sintering aid (see column 27, lines 30-55).

12. The ceramic substrate according to claim 5, Koichi show the impurity element is at least one selected from the group consisting of Y and O (see column 27, lines 30-55).

13. Katsuda et al. (figures 1 to 30b) specifically figure 29 show a semiconductor producing/examining device comprising the ceramic substrate **11** having a conductor **19,20** inside thereof wherein the ceramic substrate is a sintered aluminum nitride substrate having a fractured section with intergranular fracture (**see column 26, line 65 to column 28, line 40**).

14. Katsuda et al. (figures 1 to 30b) specifically figure 30a show a ceramic substrate **11** comprising a conductor **19,20** on a surface thereof, wherein the ceramic substrate is a sintered aluminum nitride substrate having a fractured section with intergranular fracture (**see column 26, line 65 to column 28, line 40**).

15. The ceramic substrate according to claim 14, Koichi show an average diameter of ceramic grains of said fractured section is 5 to 10 micro-meters (**see column 28, lines 61-64**).

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16. The ceramic substrate according to claim 14, Koichi show has an impurity element is locally distributed in boundaries of ceramic grains of said fractured section.

17. The ceramic substrate according to claim 14, Koichi show the thermal conductivity of said ceramic substrate 100 - 120 W/m - K (see column 30, lines 24-26).

18. The ceramic substrate according to claim 14, Koichi show has an impurity-existent area where an impurity element is locally distributed in triple points of crystal grains, and an impurity element-nonexistent area where an impurity is not locally distributed in the triple points of the crystal grains. (see column 29, line 26 to column 30, line 2).

19. The ceramic substrate according to claim 14, Koichi show wherein said ceramic substrate has a diameter of 200 mm or more. (see column 27, lines 56-66).

21. The ceramic substrate according to claim 14, Koichi show the ceramic substrate has a thickness of 25 mm or less (see column 28, lines 20-32).

22. The ceramic substrate according to claim 16, Koichi show the impurity element is a sintering aid (see column 27, lines 30-55).

23. The ceramic substrate according to claim 16, Koichi show the impurity element is at least one selected from the group consisting of Y and O (see column 27, lines 30-55).

24. The ceramic substrate according to claim 18, Koichi show the impurity element is a sintering aid (see column 27, lines 30-55).

25. The ceramic substrate according to claim 18, Koichi show the impurity element is at least one selected from the group consisting of Y and O (see column 27, lines 30-55).

26. Katsuda et al. (figures 1 to 30b) specifically figure 29 show a semiconductor producing/examining device comprising the ceramic substrate **11** comprising a

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conductor **19,20** on a surface thereof, wherein the ceramic substrate is a sintered aluminum nitride substrate having a fractured section with intergranular fracture (**see column 26, line 65 to column 28, line 40**).

Claims 7 and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Katsuda et al. (U.S. Patent # 6,001,760) in view of Natsuhara et al. (U.S. Patent # 6,458,444 B1).

Katsuda et al. show the features of the claimed invention as detailed above, but fails to explicitly show the ceramic substrate has a diameter of 300 micro-meters or more. However, Note that the specification contains no disclosure of either the critical nature of the claimed dimensions or any unexpected results arising therefrom. Where patentability is said to be based upon particular chosen dimensions or upon another variable recited in a claim, the Applicant must show that the chosen dimensions are critical. In re Woodruff, 919 F.2d 1575, 1578, 16 USPQ2d 1934, 1936 (Fed. Cir. 1990).

Natsuhara et al. is cited for showing a ceramic substrate and polishing method. Specifically, Natsuhara et al. (figures 1 to 10) specifically figure 4 discloses show the ceramic substrate has a diameter of 300 micro-meters or more (see Table 1, Sample 11 and 12) for the purpose of relatively increasing the surface roughness.

Therefore, it would have been obvious to one of ordinary skill in the art to use Natsuhara et al.'s substrate diameter to modify Katsuda et al.'s substrate for the purpose of relatively increasing the surface roughness.

Response

Applicant's arguments filed 1/8/2004 have been fully considered, but are moot in view of the new grounds of rejections detailed above.

The insertion of Applicant's additional claimed language, for example, "in claims 1-5 and new claims 6-26" cause for further search and consideration to make this action final.

Applicant's amendment necessitated the new grounds of rejection. Accordingly, **THIS ACTION IS MADE FINAL**. See M.P.E.P. § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 C.F.R. § 1.136(a).

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A SHORTENED STATUTORY PERIOD FOR RESPONSE TO THIS FINAL ACTION IS SET TO EXPIRE THREE MONTHS FROM THE DATE OF THIS ACTION. IN THE EVENT A FIRST RESPONSE IS FILED WITHIN TWO MONTHS OF THE MAILING DATE OF THIS FINAL ACTION AND THE ADVISORY ACTION IS NOT MAILED UNTIL AFTER THE END OF THE THREE-MONTH SHORTENED STATUTORY PERIOD, THEN THE SHORTENED STATUTORY PERIOD WILL EXPIRE ON THE DATE THE ADVISORY ACTION IS MAILED, AND ANY EXTENSION FEE PURSUANT TO 37 C.F.R. § 1.136(a) WILL BE CALCULATED FROM THE MAILING DATE OF THE ADVISORY ACTION. IN NO EVENT WILL THE STATUTORY PERIOD FOR RESPONSE EXPIRE LATER THAN SIX MONTHS FROM THE DATE OF THIS FINAL ACTION.

The listed references are cited as of interest to this application, but not applied at this time.

Field of Search	Date
U.S. Class and subclass: 257/703,700,701,758,705,707	6/30/03 4/1/04
Other Documentation: foreign patents and literature in 257/703,700,701,758,705,707	6/30/03 4/1/04
Electronic data base(s): U.S. Patents EAST	6/30/03 4/1/04

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alexander O Williams whose telephone number is (571) 272 1924. The examiner can normally be reached on M-F 6:30-7:00PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272 1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AOW
4/1/04

A handwritten signature in black ink, appearing to read 'Alexander Williams', with a stylized flourish at the end.

Alexander Williams
Primary Examiner